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The $10,000,000 Hetch Hetchy Water Bond Issue

The Chamber of Commerce, through its Sub-committee on Water and Power of the Municipal Affairs Committee, has been studying the Hetch Hetchy water and power problems since November, 1923, the task was undertaken without any restrictions as to policy and without any predetermined conclusions. The whole subject matter was considered solely from the standpoint of applying business judgment to the City's affairs.

Various officials and other persons informed on the subject were invited to present facts and conclusions. Reports of the City Engineer were analyzed, as were all other known written reports. Legal opinions on water-rights laws, debt limitations and Raker Act provisions were secured and analyzed.

I.
MAJOR CONCLUSIONS

This report deals specifically with the $10,000,000 water bond issue on which the people of San Francisco will be asked to vote on October 7 next, and with the reasons that should urge the people to authorize this issue. The facts on which the report is based are outlined in the following sections. The major conclusions arrived at on the bases of these facts are as follows:

1. COMPLETION OF WATER PROJECT IS CITY'S MOST URGENT NEED

Completion of Hetch Hetchy water system is San Francisco's most outstanding need, if the City's heavy investment and legal rights to the water are to be preserved. Because of its importance, the completion of the water project must not be interfered with nor diverted by any other project.

2. MUST VOTE WATER BONDS TO PRESERVE TITLE TO WATER

The remaining unconstructed portion of the water project must be financed and completed to preserve our water rights and save the investment already made. Unless the $10,000,000 bond issue is voted, construction work will automatically cease early in 1925, and the City, by such cessation, especially if long-continued, will risk the loss of its legal rights to the Hetch Hetchy water, to develop which $45,000,000 is already invested. These legal rights rest on State laws, (not on the Raker Act); their preservation rests on diligence in carrying the project to completion and in putting the water to beneficial use.

3. FUTURE WATER CONSTRUCTION FINANCING MUST HAVE PRIORITY

The $10,000,000 bond issue will finance construction work on the Sierra tunnel and a portion of the Coast Range tunnels, for about three years. It will then be necessary to provide an additional $23,000,000 to complete the 31-mile Coast Range tunnels and to construct the 42-mile San Joaquin Valley pipe line. These additional requirements must be considered as having priority over any other project, on the City's financial resources. No other venture must be allowed to interfere with the City's ability to finance and prosecute the Hetch Hetchy water construction to completion with the necessary "due diligence" required to preserve its rights.

4. COMPLETE FINANCIAL PROGRAM REQUIRED

The orderly and economical acquisition or construction of the many projects requiring municipal financing—of which the water project is only one, although first in importance— requires the immediate formulation of a development program, based on the relative importance of each project, and the City's financial resources over a period of years.

5. OTHER MARKETS FOR WATER MAY REQUIRE EARLIER COMPLETION

If, by mutual agreement, the additional water needs of the East Bay or Peninsula communities are to be supplied from Hetch Hetchy or Spring Valley sources, this will be mutually advantageous and will require a speeding up of the financing and construction program for the completion of Hetch Hetchy.

SAN FRANCISCO CHAMBER OF COMMERCE
SUB-COMMITTEE ON WATER & POWER,
GEORGE FILMER, Chairman
MUNICIPAL AFFAIRS COMMITTEE,
PAUL BANCROFT, Chairman.

II.

THE $10,000,000 BOND ISSUE PROPOSAL

A bond issue to provide additional funds for continuing the construction work on the Hetch Hetchy water project was first officially proposed in December 1923. During a protracted supervisorial controversy over the valuation of privately-owned power distributing systems, as an incident to the disposal of Hetch Hetchy power, the fact was developed that with the com-

pletion of the 1924 construction program, the $45,000,000 water bond issue of 1910 would be exhausted. It was urged, therefore, that the Supervisors were confronted with the immediate necessity of bringing before the people another bond issue for water construction.

Such an issue, in the amount of $33,000,000 to complete the whole project, or $25,000,000 to complete the tunnel work only, was urged for an election to be held about April 1st. Due to an interruption in the legislative proceedings, this proved to be impossible. An election about May 15th was then urged. Finally, however, the date of September 2nd was agreed upon for the submission of bond elections for water construction and power distribution, without specification of the amount to be submitted for either proposal.

BOND ISSUE FOR SIERRA TUNNEL PROPOSED

Due to illness and disability of two members of the Supervisors Public Utilities Committee, the legislative proceedings were again held up, making it impossible to hold the election on September 2nd. On July 28th, the Utilities Committee reported to the Board of Supervisors, recommending: (1) An $8,000,000 water bond issue for the construction of the 17-mile Sierra tunnel, west from the Moccasin Creek power house to the San Joaquin Valley; (2) the postponement for two years of further water bond issues, such postponement being stated as necessary by reason of the City's limited resources under the Charter 15 per cent debt limit; (3) the submission to the people at the November election of a Charter amendment to increase the debt limitation from 15 per cent to 20 per cent of the assessed valuation; and (4) the submission of a bond issue for power distribution as soon as, but not until, the Railroad Commission's valuation figures of the privately-owned systems are made available about the middle of 1925.

ENGINEER RECOMMENDS START ON COAST RANGE TUNNEL

In a report dated July 31st, 1924 the City Engineer stated that the controlling unit of the uncompleted portion of the project, from the standpoint of time, is the 31-mile Coast Range tunnel, which, he estimates, will require five years to drive.

He recommended the inclusion in the proposed bond issue of an additional $1,750,000, to cover 3½ miles of Coast Range tunnel from Irvington to Alameda Creek. His report states that by constructing about 7000 feet of pipe, this tunnel, in conjunction

with the Hetch Hetchy Bay Division conduit, will deliver water to San Francisco by gravity; that this will eliminate present Spring Valley pumping costs; and that, in consideration thereof, terms might be made with the Spring Valley Water Company to cover interest charges on the investment, in lieu of present pumping costs that will be eliminated.

At a hearing before the Board of Supervisors on August 7th, 1924, the Utilities Committee approved of the increase from $8,000,000 as recommended by it, to $10,000,000 for the purpose of providing for the construction recommended by the City Engineer. The necessary legislative action was thereupon taken by the Supervisors, after the procedure and the proceedings had been submitted to and approved by the City's bond advisor, Judge J. C. Thompson of New York City. On August 11th, an ordinance was passed specifying the terms of the bond issue and fixing the date of election as October 7th next.

SUPERVISORS ADOPT POLICY ON FUTURE FINANCING

By resolution adopted on August 7th as a "Committee of the Whole," and at a special meeting on August 8th, the Board of Supervisors in addition to initiating the $10,000,000 water bond issue and postponing the power bond issue until next year declared:

"That as soon as it becomes necessary to secure further sums for the construction and completion of the Hetch Hetchy water supply" (estimated as 2½ years hence by the City Engineer) "the Board of Supervisors will submit to the people a proposition to incur a bonded indebtedness in the entire amount necessary to complete said water supply; provided that no further bond election for water supply shall be submitted during the year 1925, unless the proposed $10,000,000 bond issue shall fail to pass."

The various projects requiring municipal financing total over $300,000,000. The Chamber of Commerce, from a business-like point of view, feels that such of these as are to be acquired or constructed cannot be developed to the best advantage of the city, and with the maximum of economy to the taxpayers, unless all are considered as units of a complete program. Water is of predominating importance, and its development must be financed. However, financial chaos and arrested community development are the certain results of proceeding to provide for each project as a separate unit. The City must develop a program, for the acquisition and the financing of the numerous projects in which it must or may embark.

III.

THE DEVELOPMENT OF THE HETCH HETCHY PROJECT

The City's first definite commitment to the Hetch Hetchy project dates back to 1908, when the United States Secretary of the Interior issued the so-called Garfield Permit. Previous efforts of the City included engineering studies; filings, subsequent abandonment, and re-filings on water rights; and attempts over a series of years to secure a permit from the Secretary of the Interior to use National park lands for San Francisco water works.

The Garfield Permit was based on the so-called Manson and Grunsky plans. It contemplated that Lake Eleanor and Cherry Creek would be developed as primary resources in advance of Hetch Hetchy; it also required the City to vote acceptance of the permit and to vote funds to acquire lands around Lake Eleanor and Hetch Hetchy. A bond issue of $600,000 was voted by the people for this purpose in 1909, as was ratification of the permit.

THE 1910 BOND ISSUE

In 1909 a succeeding Secretary of the Interior directed the City to show cause why some of the more important features of the Garfield Permit should not be revoked. On his suggestion that the City show its good faith by voting a bond issue of sufficient size to develop Tuolumne River sources, the people in 1910 voted a bond issue of $45,000,000.

This bond issue was voted under the conditions of the Garfield Permit, to build a water supply system under the Manson and Grunsky plans. It did not contemplate the development of any large sources of electrical energy; such electrical energy as was to be developed along the line, was to be used, in whole or in part, to pump the water over the Altamont Pass.

The specific proposition on which the people voted, according to its official title, was **"for the purpose of the acquisition, construction and completion of a public utility, to-wit: a water supply and works to be owned and controlled by the City and County of San Francisco, to furnish to said City and County and the inhabitants thereof, a sufficient supply of water for all purposes, the sources of said supply to be Lake Eleanor, the waters of the Tuolumne River and its tributaries in Tuolumne County, California . . . . . "**

THE RAKER ACT

A board of U. S. Army Engineers was appointed to investigate all possible San Francisco water sources, in the proceedings above mentioned, whereby the City was directed to show cause why the important portions of the Garfield Permit should not be revoked. John R. Freeman, an eminent water-supply engineer, was retained by the City for an independent investigation and report. The reports of the U. S. Board of Army Engineers and of Mr. Freeman were submitted to the Secretary of the Interior in 1912. After hearings before the Secretary of the Interior, the matter was referred to Congress and in 1913 the so-called Raker Act was passed, giving the City certain rights in national park lands and, in consideration of such rights, imposing certain conditions on the City.

The Raker Act was based on what has come to be called the Freeman plan—hydraulic grade construction, elimination of the need of pumping water over Altamont Pass, and development of power drops. The Raker Act specifically required the development of power to the extent of 10,000 horsepower within three years after completion of works adapted for the generation of electricity, increasing to 60,000 horsepower within twenty years. The Garfield Permit, however, based on a radically different plan, was the basis for the proposition on which the people voted the $45,000,000 of bonds in 1910.

PRESENT STATUS OF CONSTRUCTION WORK

Active construction work was started in 1914. Due to difficulties of financing occasioned by the start in that year of the World War, which difficulties were accentuated in 1917 when the United States entered the war, progress was slow. According to the City Engineer, it early became evident that the original estimate of $45,000,000 would be inadequate. This, he stated, was due to the change of construction required by the Freeman plan and Raker Act provisions, and, later, the higher level of labor and material costs as a result of the war.

It is stated by the City Engineer that there will be completed, by the end of 1924, the Mountain Division down to and including the Moccasin Creek power house, a power transmission line from the power house to Newark, and the Bay Division of the Hetch Hetchy, to be used temporarily to carry water from the Spring Valley's Calaveras system to the Crystal Springs reservoirs and for which the Spring Valley will pay the City $250,000 a year. Of the $45,000,000 voted in 1910, $7,000,000 will have been

expended for the power house, and $3,000,000 for the power transmission line, in furtherance of a construction policy designed to bring in an early revenue by the sale of power, to offset the debt charges for water construction and to facilitate the additional financing required to complete the water project.

By the end of 1924, the City will have developed water storage and part of its water conduit, and will be ready to generate 93,000 horsepower of electrical energy, stated as equivalent to 45 per cent of San Francisco's 1925 demand. The balance of the water construction to be financed and completed will consist of 17 miles of Sierra tunnels, west from the power house, 42 miles of pipe line across the San Joaquin Valley and 31 miles of Coast Range tunnels.

IV.

THE URGENT NECESSITY OF COMPLETING THE WATER PROJECT

The long and detailed study of all of the data presented and accumulated has led to the inevitable conclusion that the most important major project confronting San Francisco is the completion of the Hetch Hetchy water system; and, concurrently, the development of markets for the water that will be surplus when the Hetch Hetchy is completed. This surplus will exist, in steadily diminshing amount, for a number of years—until the development of San Francisco and other regions using the water, require all of the yields of the initial Hetch Hetchy development, and force additional development, up to the ultimate capacity of 400,000,000 gallons daily.

No major project involving heavy expenditures of municipal funds should be considered without regard to available funds and other necessities that involve major financing. Nor can any such project be considered, as of the present only. Each project involving large expenditures must be considered with relation to other projects, to the relative need of San Francisco for such projects, and to the City's financial resources over a period of years.

ONLY PROSPECT OF LOWER WATER RATES

The urgent necessity of completing the Hetch Hetchy project, and of voting the $10,000,000 bond issue that is proposed, is dictated by the legal phases incidental to the project, which effect the preservation of our water rights and the safeguarding of our $45,000,000 investment, and by the prospect of reducing our rates for water. Water rates in San Francisco are stated by the

City Engineer to be the second highest in the country. This is due to the fact that the water company, out of rates, is required to amortize some of its capital costs, which fund will revert to the City in the event of purchase.

The City Engineer has repeatedly urged that the only prospect of a material reduction in our present water rates is by the completion of Hetch Hetchy. It may be that such low rates cannot be put into effect immediately upon the bringing of Hetch Hetchy water into San Francisco. It does, however, seem of prime importance that only by the development of the Hetch Hetchy project and the future acquisition of Spring Valley can the City of San Francisco hope to get to the point where it can offer water to industries at the required comparatively low rates.

PRESERVATION OF WATER RIGHTS

The City's water rights rest entirely on State laws, and not at all on the Raker Act, as is sometimes erroneously assumed. The Raker Act grants only construction and storage rights in National Park lands, but no water rights. The City's water rights are in process of perfection under appropriation notices posted in accordance with State law. To the perfection of such water rights in California reasonable diligence in prosecuting a project to completion is essential.

A project is not completed until the water is diverted to a point of final distribution. It must then be put to a beneficial use, if the rights acquired by the completion of the project are to be preserved. When a project is completed the rights acquired will re-date back to the time of the posted notice of appropriation. But rival claimants may in the meantime acquire prior rights if there is not due diligence in prosecuting the work in a substantial manner and completing the project.

The failure or neglect to provide funds necessary for construction to bring the water to the point of beneficial use is not considered by the courts as a reasonable excuse, where the question of failure to exercise due diligence is concerned. Such failure or neglect on the part of the City would automatically result in the cessation of work, and would put the City in default.

We will have a situation, with the project in its present state, where the water impounded by the City in the mountains will be released at the tail-race of the Moccasin Creek power plant into the Tuolumne. If for any reason the City for a term of years should fail, or neglect, or to be financially unable to carry on its water works construction between the Moccasin Creek power

house and Irvington, the way will be paved for rival appropriators below the power house to take and apply the water to beneficial use. Subsequently, perhaps, when the City would desire to again take the water from the river below the power house and bring it via tunnel and pipe line into San Francisco, such appropriators could successfully contest the City's claim to such water.

THE RIGHT TO DIVERT WATER FROM SAN JOAQUIN VALLEY

The legal effect of a provision of the Raker Act, frequently referred to, concerns the right of the City to use Hetch Hetchy water. The specific provision is to the effect that the City "shall not divert beyond the limits of the San Joaquin Valley any more of the waters from the Tuolumne watershed than, together with the waters which it **now has** or **may hereafter acquire,** shall be necessary for its beneficial use for domestic and other municipal purposes."

The City now has practically no water, only that small supply developed by wells in the University Mound district known as the Municipal Water Works, and other wells operated by the Park Commission. The water it **may hereafter acquire** would be the yield of that portion of the Spring Valley system that is under option to the City.

The estimated present use of water by the City is approximately 39,550,000 gallons per day. The estimated present demand on the Spring Valley system, including surburban demand, is 41,800,000 gallons daily. The City Engineer in his report of July 31, 1924 stated that if the rate of increase in water consumption, first half of 1924 over first half of 1923, continues to be maintained, the developed supply will be equalled by the demand by 1930. With East Bay participation this period will be reduced.

With a normal construction program on the Hetch Hetchy, as at present contemplated, requiring eight years, the City's need for and use of Hetch Hetchy water in steadily increasing annual quantities will not conflict with the above quoted provision of the Raker Act.

V.

NECESSITY FOR INCREASED WATER SUPPLY

The draft on the Spring Valley system during the first half of 1924 averaged 41,830,000 gallons daily, during which time, the consumption of water in San Francisco averaged 39,550,000 gallons per day. This quantity, although at a rate lower than the

average per capita rate of large cities, represented a local increase, and was consumed in the face of an energetic advertising campaign launched by the Spring Valley Water Company, and a continuous publicity campaign on the part of the Company and City officials, designed to bring about economy in the use of water as one measure to cope with the extraordinarily low water-shortage resulting from an unusually dry year, following two years of subnormal rainfall.

Differences exist between the estimates of the City Engineer and engineers of the Spring Valley Water Company, as to the yield of those properties of the Company that are under option for future purchase by the City. The City Engineer's estimate of this yield is 66,000,000 gallons per day; the Company's estimates range from 90,000,000 to 100,000,000 gallons per day.

Both are mutually agreed that the present local and suburban draft on the system averages 41,830,000 gallons daily, and that, comparing such consumption for the first six months of 1924 with the same period in 1923, this represents an increase of 7.1 per cent to 7.4 per cent for the year. If the City Engineer's estimate of yield of Spring Valley properties under option to the City is correct, and if such a rate of increase should be maintained annually, the present available supply will be equalled by the demand in 1931. It is to be noted that the annual increase, including the previous year 1922-23, has averaged 7.2 per cent. If the Company's estimate of yield is correct, the available supply will be sufficient for the demand, on the basis of a 7.1 per cent annual increase, up to 1935 or 1937.

The City Engineer, however, in his report of July 31, 1924, to the Supervisors, points out, first, that the current year's consumption has been in the face of an energetic advertising and publicity campaign directed toward consumers to conserve water; and, second, that the average per capita use in San Francisco is 70 gallons per day, against an average per capita of 100 gallons per day for most large cities. On these bases, he has ventured the opinion that the San Francisco demand will equal the available supply during the year 1928.

Without entering into the controversy, and for the purposes of the most liberal conclusion, if it is assumed: (1) that the Spring Valley engineer's estimate of 100,000,000 gallons per day yield may be correct; (2) that the present 7.1 per cent or 7.4 per cent annual increase in water consumption (although greater than the average annual increase) is subnormal, due to the concert of efforts to economize on water consumption; and (3)

that San Francisco's per capita consumption of 70 gallons per day, as against an average of 100 gallons per day, can be expected to grow when more water or lower rates, or both, are available—it is then a reasonable conclusion that additional water resources will be needed when the Hetch Hetchy supply will be available under the present financing and construction program—3 years to expend the $10,000,000 now proposed to be authorized, and five years of construction work after the additional $23,000,000 shall be authorized.

EAST BAY REQUIREMENTS MAY DICTATE EARLIER COMPLETION

The foregoing assumptions and estimates are based entirely on San Francisco and Peninsula municipal and domestic requirements for water which are now being supplied from Spring Valley sources. Competent evidence points to the requirement of the East Bay communities for additional water by 1929, and to the necessity of the Peninsula communities for additional water supplies in the very near future.

If Spring Valley sources, now supplying San Francisco almost exclusively, or the Hetch Hetchy supply, or both, are, by mutual agreement, to be used to augument the present East Bay or Peninsula water supplies, the necessary "outside date" for the completion of Hetch Hetchy must be advanced.

The construction program now contemplated is that the proposed $10,000,000 bond issue will supply funds for three years' work; that 2½ years hence an additional $23,000,000 bond issue will be proposed to the people and that this, if voted, will insure the completion of the water project, the uncompleted portions involving five years of construction. This program would bring the Hetch Hetchy water project to completion in 1932 or 1933.

If, in the interim, the growing East Bay or Peninsula water requirements are to be met by water from either Hetch Hetchy or Spring Valley sources, this construction program will have to be expedited to insure and guarantee the water needs of San Francisco and these outside communities. As stated, the present construction and financing program will require eight years.

HETCH HETCHY CAN SUPPLY WHOLE BAY REGION

San Francisco's requirements, with little or no margin for safety, will require the completion of Hetch Hetchy and the availability of this additional supply, in accordance with the financing

and time schedule stated. If, in addition, East Bay or Peninsula additional requirements are to be met out of the Hetch Hetchy or Spring Valley supplies, Hetch Hetchy water must be available, sufficiently in advance of 1932 to meet these requirements. If the whole project should be financed now, the earliest date of completion, on the basis of 5 years to bore the 31-mile Coast Range tunnel, would be 1929.

Water resources available and in process of development, for San Francisco and the East Bay, total 102,000,000 gallons daily. The initial Hetch Hetchy development is estimated as 200,000,000 additional gallons daily.

It would be mutually advantageous to San Francisco, and the East Bay and Peninsula communities, if Hetch Hetchy should be used as a single source for the additional combined needs of the region. With present supplies, it will be adequate for a population of over 3,000,000 people; with the additional storage that will be produced by its ultimate development, it, (with present supplies), will be ample for a regional population of 5,000,000.

VI.

CONCLUSION:
Why the Bond Issue Should Pass

This $10,000,000 bond issue must carry, if we are to avoid the risk of the municipal calamity that will be involved in the loss of our ownership, and investment of $45,000,000, in the Hetch Hetchy project.

The bond issue must pass to insure the carrying on of San Francisco's most important municipal enterprise.

The bond issue must carry to permit of the continuation of construction work, thus maintaining our legal status of exercising "due diligence" in the prosecution of the project.

The bond issue must be voted to insure an adequate water supply for San Francisco as it is now growing, and if it is to continue to grow.

The bond issue must be approved by the people as one of the necessary steps toward the ultimate reduction of our water rates, now the second highest in the country.

The $10,000,000 bond issue must be voted if San Francisco is to be in a position to offer water to East Bay and Peninsula communities, whose present supplies must be augmented from San Francisco or independent sources.